Logicube NETConnect™ User's Manual

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1. Introduction to the Logicube NETConnect

Introduction

NETConnect

Congratulations on your purchase of the Logicube NETConnect™ network connectivity module.

The Logicube NETConnect is designed to work in conjunction with the Logicube Forensic Dossier and MPFS. The NETConnect provides the convenience of allowing multiple investigators to access a single set of case files, streamlining the analysis process by allowing broad access either locally or remotely to the evidence data post capture.

Specifications

Power Requirements	TBD
Power Consumption	>170 Watts
Operating Temperature	10°to 35°C (50°to 95°F)
Relative Humidity	10%- 80%
Net Weight	2lbs 11oz
Dimensions	10.5” x 8.3” x 2.5”
Agency Approvals	RoHS compliant

Features

- Works seamlessly with the Forensic Dossier and MPFS
- Uses CIFS, NFS, FTP file access protocols
- 10/100/1000 Gigabit Ethernet interface
- Supports Windows, Mac, and Linux operating systems
- Data transfer rate approaching 7 GB/min (depending on your network infrastructure performance)
- Network protocols supported include ARP, IP, UDP, TCP, HTTP, ICMP, BOOTP/DHCP, DNS, MDNS, Telnet, and iSCSI
- NETConnect can be configured as a “client” for a network file system or as an actual network file system server or NAS
- Allows you to “push” or transfer evidence data to pre-defined network destinations, verify network transfer, format and wipe drives
- Administrative functions allow users to establish user names, passwords, manage access control, maintain credentials, set destination IP addresses and domain names
- Convenient “Macro” feature allows users to easily initiate preconfigured commands from the control panel of NETConnect

Using this guide

This user guide is made up of 8 sections:

- Introduction
- Getting Started
- Connecting NETConnect to a Network
- Administrative Functions
- Software Updating Instructions
- Creating a Recovery USB Flash Drive
- Frequently Asked Questions
- Index

System description

The complete Logicube NETConnect system includes the following:

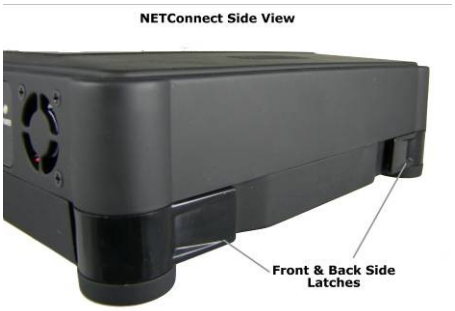
- The Logicube NETConnect unit
- A 5’ CAT-6 Ethernet (network) cable
- A DVD containing Users Manual, and Software

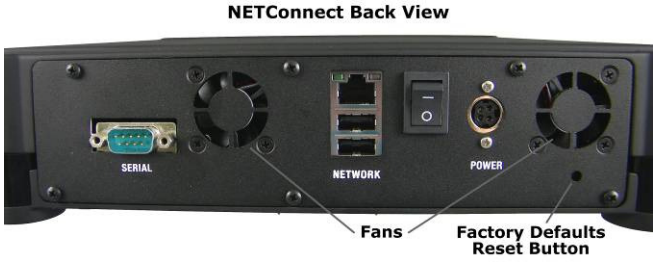
NOTE: Please contact Logicube Technical Support at (818) 700-8488 X3 if any of the above pieces are missing.

2. Getting Started

NETConnect Overview

Figure 1, NETConnect™ Overview





Network Protocols

The NETConnect supports the following Network Protocols

- ARP
- IP
- UDP
- TCP
- HTTP
- ICMP
- BOOTP/DHCP
- DNS
- MDNS
- Telnet
- iSCSI

File Protocols

The NETConnect supports the following file access protocols;

- CIFS
- NFS
- FTP

The Front Panel

The NETConnect has a front panel that has two buttons and three LEDs:

- **Start button –** This button is used to start the Macro push process. More information can be found in Section 3 under the “Pushing Data” section.
- **Cancel button –** The cancel button stops the current process (e.g. config commit or push)
- **Power LED** – When this LED is solid, the NETConnect has completed its boot-up sequence. When this LED is blinking, the NETConnect is still going through its boot-up process
- **Ready LED –** When this LED is solid, the NETConnect is ready. When this LED is blinking, the NETConnect is still processing the last command

- **Error LED –** This LED will light up when the NETConnect encounters an error. You can find more information on the error by using the status command via the Command Line Interface.

Connecting NETConnect to the Forensic Dossier tray

The NETConnect can be attached to the Forensic Dossier tray or the MPFS allowing easy access to the hard drives used either with the Forensic Dossier tray or the MPFS.

To connect the NETConnect to the Forensic Dossier tray, follow the instructions below:

1. Ensure that power and all cables attached to the Dossier have been disconnected.
2. Turn the tabs on each corner of the unit as shown in Fig. 1:

Figure 1, Opening corner latches.

3. Lift the top half of the Forensic Dossier off the bottom of the unit as shown in Fig. 2 and set the Forensic Dossier top aside.

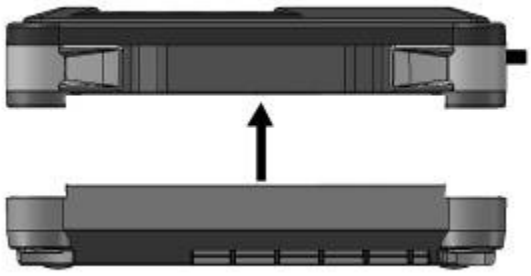


Figure 2, Lifting head off unit.

4. Set the NETConnect on top of the Dossier tray and make sure the NetConnect underside connector aligns with the Forensic Dossier tray's connector as shown in Fig. 3:

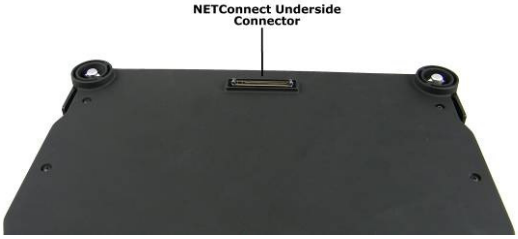


Figure 3. NETConnect Underside Connector

5. Close the front and back side latches to lock the NETConnect in place.

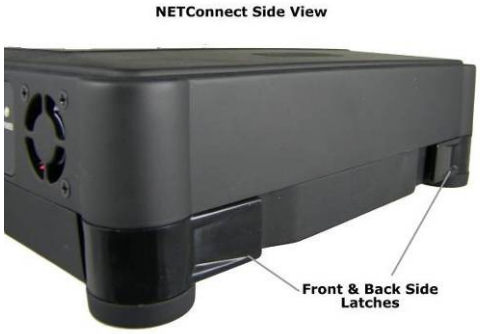


Figure 4. Front & back side latches

Connecting NETConnect to the MPFS

To connect the NETConnect to the MPFS™, follow the instructions below:

1. Ensure that power and all cables attached to the MPFS® have been disconnected.
2. Set the NETConnect on top of the MPFS™ and make sure the NetConnect underside connector aligns with the connector on top of the MPFS™.

Figure 5, Underside Connector

3. Close the corner latches to lock the NetConnect in place.

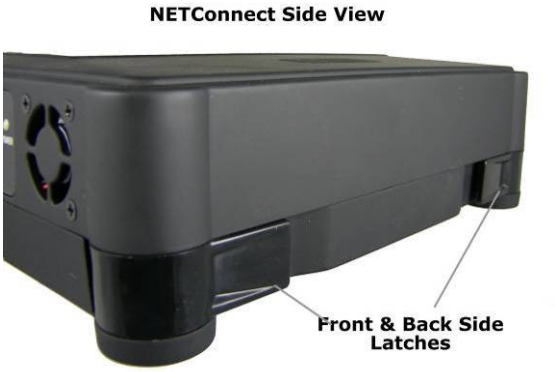


Figure 6, Side View

3. Connecting NETConnect to a Network

Configuring NETConnect

This chapter describes the two ways the NETConnect is used and how NETConnect can be configured.

The NETConnect can act as a NAS (Network Attached Storage) out of the box. Computers on the same network can connect to the NETConnect and copy data stored in the attached Forensic Dossier tray or the attached MPFS. Multiple users can mount the drives to their workstation to immediately start working with the data or copy files to any location including their local drive, CD, DVD, USB drive, a shared directory or another network drive location.

Computers can also connect to the NETConnect and push the data to a shared folder on any computer or server on the same network using the CIFS, NFS, or FTP file protocols (these protocols allow a user on a client computer to access files over a network). Administrators can configure NETConnect using a network protocol such as Telnet (a network protocol available and built-in to most Windows Operating Systems). Once data is “pushed” to the network location it can be viewed from any workstation on the network, copied from the network to the workstation’s local drive or to any other directory on the same network.

Connecting as a NAS

These instructions show how to connect to the NETConnect from a PC on the same network. With this type of connection, you will be able to connect to the NETConnect and copy data from the attached Dossier tray or MPFS to the PC you are using.

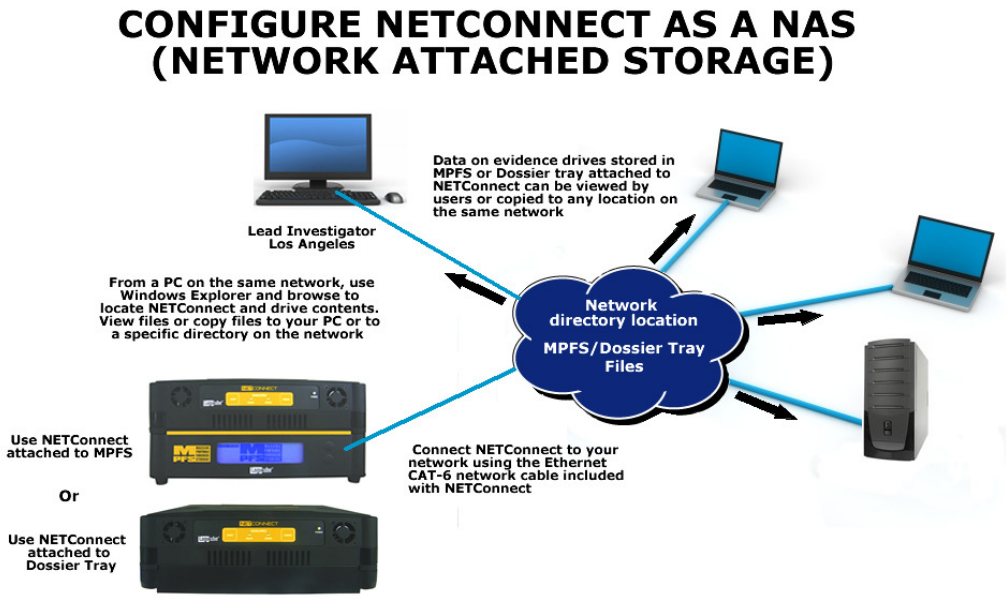
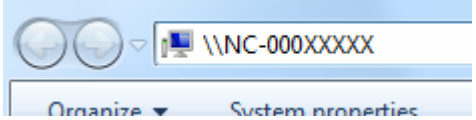
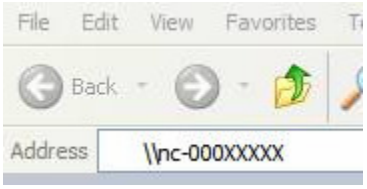

CONFIGURE NETCONNECT AS A NAS
(NETWORK ATTACHED STORAGE)
Data on evidence drives stored in MPFS or Dossier tray attached to NETConnect can be viewed by users or copied to any location on the same network
Lead Investigator
Los Angeles
From a PC on the same network, use Windows Explorer and browse to locate NETConnect and drive contents. View files or copy files to your PC or to a specific directory on the network
Network directory location
MPFS/Dossier Tray Files
Use NETConnect attached to MPFS
Or
Use NETConnect attached to Dossier Tray
Connect NETConnect to your network using the Ethernet CAT-6 network cable included with NETConnect

Figure 7. Configure NETConnect as a NAS (Network Attached Storage)

1. Attach the power adapter to the back of the NETConnect.
2. Attach a CAT-6 Ethernet (network) cable to the network connector in the back of the NETConnect. Attach the other end of the CAT-6 Ethernet (network) cable to your network (consult with your IT department if you need assistance in connecting to your network).
3. Turn the power switch of the NETConnect to the ON position. The Power LED on the front of the NETConnect should light up.
4. The NETConnect will take about 45-60 seconds to boot up. The Ready LED should light up when the NETConnect has completed its boot-up sequence.
5. From a PC attached to the same network, open **Computer** or **My Computer** and type ***\\NC-000XXXXX*** where XXXXX is the serial number of the NETConnect then press Enter.

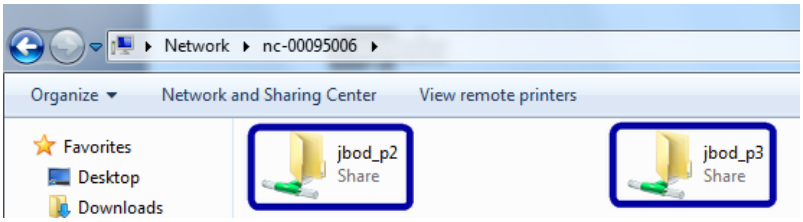


Windows Vista / Windows 7



Windows XP

6. The drives inside the Dossier Tray or MPFS should appear in the window.



7. To access the contents of the drive, double-click on any of the folders. A login window should appear. Login with the username ***guest*** and the password ***guest***.

8. From you can copy any or all the files to your computer by either using the Drag-and-drop method in Windows or using the Copy & Paste method. You can also simply view the files in this state. The files are write protected.

Configuring NETConnect to transfer data using FTP or CIFS

These instructions show how to connect to and configure the NETConnect to transfer data using CIFS or FTP file protocols.

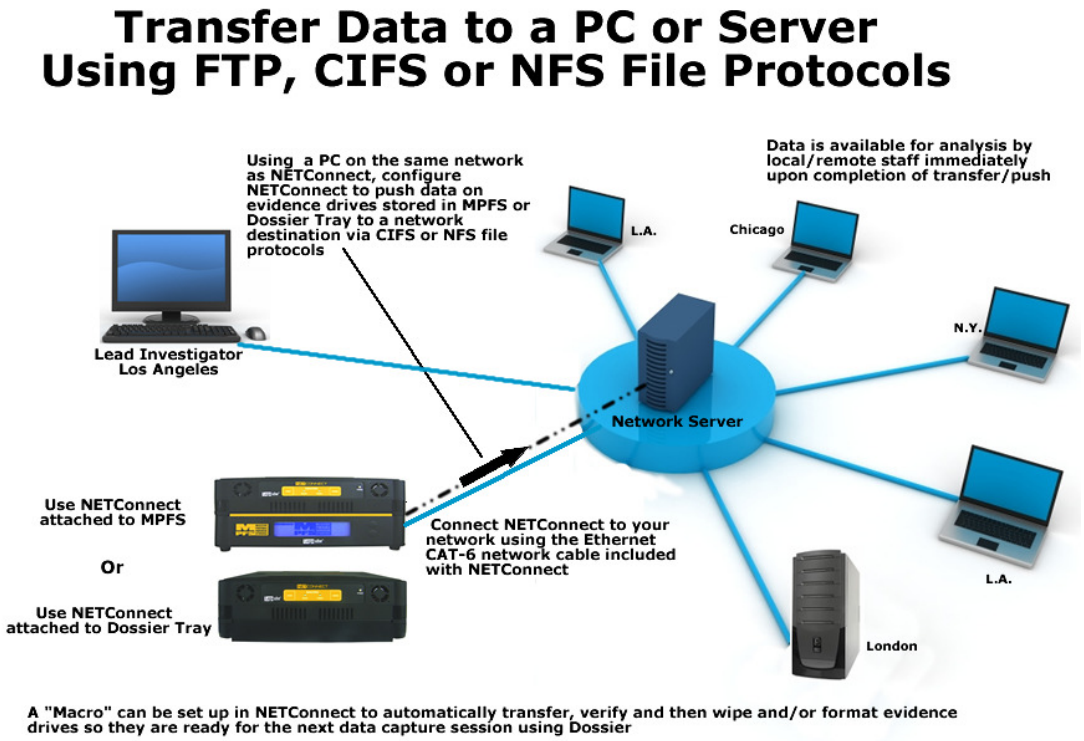

Transfer Data to a PC or Server
Using FTP, CIFS or NFS File Protocols
Using a PC on the same network as NETConnect, configure NETConnect to push data on evidence drives stored in MPFS or Dossier Tray to a network destination via CIFS or NFS file protocols
Data is available for analysis by local/remote staff immediately upon completion of transfer/push
L.A.
Chicago
N.Y.
Lead Investigator
Los Angeles
Network Server
Use NETConnect attached to MPFS
Or
Use NETConnect attached to Dossier Tray
Connect NETConnect to your network using the Ethernet CAT-6 network cable included with NETConnect
L.A.
London
A "Macro" can be set up in NETConnect to automatically transfer, verify and then wipe and/or format evidence drives so they are ready for the next data capture session using Dossier

Figure 9. Configuring Network Push with a NETConnect with Dossier Tray or MPFS

PREREQUESITES:
To push data to a PC or server on the same network, there is information required that may only be available from your Systems Administrator, Network Administrator, or IT department. The following information is required:

a. A Telnet client.
b. The IP address or name of the destination computer or server (where you want to push the data to).
c. Whether or not the computer or server is connected to a domain (if using CIFS).
d. The shared folder's name (if using CIFS).
e. A username and password that has access to the shared folder (or FTP username and password).

NOTE:
Windows XP has a built-in Telnet client. If you are using Windows Vista or Windows 7, you must install Telnet manually as it is not installed by default. This may require assistance from your IT department. You can also use any other Telnet program of your choice.

Installing Telnet in Windows Vista or 7:
By default, Telnet is not installed with Windows, but you can install it by following the steps below.

1. Click ***Start > Control Panel*** and select either ***Programs & Features*** (for Vista) or ***Programs*** (for Seven).
2. Click ***Turn Windows features on or off***. If you are prompted for an administrator password or confirmation, type the administrator password or provide confirmation (for assistance with administrator passwords, check with your IT department).
3. In the Windows Features dialog box, select the Telnet Client check box.
4. Click OK. The installation might take several minutes.

Connecting to NETConnect using Telnet via Windows XP:

1. Attach the power adapter to the back of the NETConnect.
2. Attach a network cable (CAT 6 type) to the RJ45 connector in the back of the NETConnect.
3. Turn the power switch of the NETConnect to the ON position. The Power LED on the front of the NETConnect should light up.

4. The NETConnect will take about 60-120 seconds to boot up. The Ready LED should light up when the NETConnect has completed its boot-up sequence.
5. On your PC, click ***Start > Run.*** The Run window should appear.
6. Type ***telnet*** in the Open: field and press Enter. The Telnet window should appear.
7. Type ***open nc-000xxxxx*** where xxxxx is the serial number of the NETConnect, then press Enter. The NETConnect login screen should appear.
8. If you were assigned a login ID and password, use your assigned login ID and password. If no credentials were assigned, you can log in with the username ***it*** and the password ***it***.
9. At this point, you should connect to the NETConnect and be able to configure it to push the files via the network or FTP using a Command Line Interface (CLI). See the Administrative Functions section below for more information on how to configure the NETConnect to push via network or FTP.

Connecting to NETConnect using Telnet via Windows Vista or Windows 7:

1. Attach the power adapter to the back of the NETConnect.
2. Attach a network cable to the RJ45 connector in the back of the NETConnect.
3. Turn the power switch of the NETConnect to the ON position. The Power LED on the front of the NETConnect should light up.
4. The NETConnect will take about 60-120 seconds to boot up. The Ready LED should light up when the NETConnect has completed its boot-up sequence.
5. On your PC, click ***Start*** and in the ***Search*** field, type ***Telnet***. Telnet should appear in search results.
6. Click Telnet. The Telnet window should appear.
7. Type ***open nc-000xxxx*** where xxxxx is the serial number of the NETConnect, then press Enter. The NETConnect login screen should appear.
8. If you were assigned a login ID and password, use your assigned login ID and password. If no credentials were assigned, you can log in with the username ***it*** and the password ***it***.

9. At this point, you should connect to the NETConnect and be able to configure it to push the files via the network or FTP using a Command Line Interface (CLI). See the Administrative Functions section below for more information on how to configure the NETConnect to push via network or FTP.

Sample FTP configuration

Below is an example of a series of commands that can be used to setup the NETConnect to push via a FTP:

1. Using a Telnet program, login to the NETConnect with the following credentials (or log in with any username and password with an **itgroup)**:

Username: it

Password: **it**

2. **Configure terminal** – brings you to the configure terminal menu.
3. **push ftp 1 –** brings you to the push FTP menu.
4. **path 192.168.1.150** or **path hostname –** sets the path to connect to an FTP server with the IP address 192.168.1.150 or an FTP server with the hostname specified.
5. **user logicube –** sets the username “logicube” to login to the FTP server specified in the Path command.
6. **password logicube –** sets the password of the user specified.
7. **enable yes –** sets this mode as enabled so it can be used to push data.
8. **exit –** brings you up one menu back to the configure terminal menu.
9. **macro** – brings you to the macro menu.
10. **delete 1** – deletes the first macro set by default.
11. **add 1 push FTP** – sets the first macro to push via FTP.
12. **config commit** – commits or saves the changes you have made so that the changes are saved even after turning the unit off.

NOTE: Using the “config commit” command will take a few seconds to save. The Ready light in

front of the NETConnect panel will light up solid green when the process is complete. You can also go to the top level menu and type **status** to see if the process has completed. The "status" command is found in the root menu. Use the **exit** command to move up one menu.

13. Start the push process using one of the two methods mentioned above.

Sample CIFS configuration

Below is an example of a series of commands that can be used to setup the NETConnect to push via a network:

1. Using a Telnet program, login to the NETConnect with the following credentials (or log in with any username and password with an **itgroup)**:

   Username: it

   Password: it

2. **configure terminal –** brings you to the configure terminal menu.
3. **mount cifs 1 –** brings you to the mount cifs menu.
4. **Path 192.168.1.150/mysharedfolder –** sets the path to connect to the PC or server with the IP address 192.168.1.150 and the shared folder named mysharedfolder.
5. **user logicube –** sets the username "logicube" to login to the PC specified in the Path command.
6. **password logicube –** sets the password of the user specified.
7. **enable yes –** sets this mode as enabled so it can be used to push data.
8. **exit –** brings you up one menu back to the configure terminal menu.
9. **macro** – brings you to the macro menu.
10. **delete 1** – deletes the first macro set by default.
11. **add 1 push CIFS** – sets the first macro to push via CIFS.
12. **config commit** – commits or saves the changes you have made so that the changes are saved even after turning the unit off.

NOTE: Using the "config commit" command will take a few seconds to save. The Ready light in

front of the NETConnect panel will light up solid green when the process is complete. You can also go to the top level menu and type **status** to see if the process has completed. The "status" command is found in the root menu. Use the **exit** command to move up one menu.

13. Start the push process using one of the two methods mentioned above.

Pushing Data

Once the NETConnect has been configured to push data, you can start the push process using one of two ways:

1. Press the **Start** button in front of the NETConnect, or
2. Type **exit** twice to go to the top level menu. The top level menu has a **macro** command you can use to start the push process. Typing **macro** from the top level menu is the same as pressing the **Start** button in front of the NETConnect.

Connecting to NETConnect using iSCSI

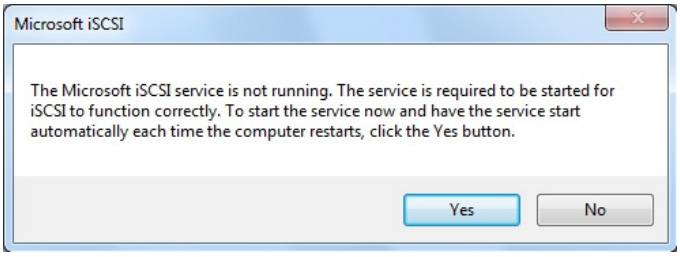
The iSCSI (Internet Small Computer System Interface) protocol can be used to connect to the NETConnect. This will allow the user to see drives in the attached Dossier Tray as a physical drive in its native data format. Drives will appear as a Hard Disk Drive on their PC. Users can then either analyze the data directly or copy the data to their PC. The drives in the attached Dossier Tray are write protected.

When using iSCSI, you can only view the contents of the drives in the attached Dossier Tray when you connect to the NETConnect as a NAS (See the section **Connecting as a NAS** in **Chapter 3. Connecting NETConnect to a network**). You will not be able to "push' the contents of the drives to a network location.

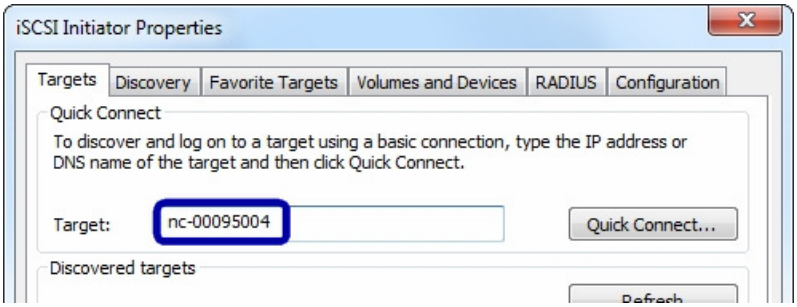
Requirement: An iSCSI initiator is required. Windows 7 has an iSCSI initiator already installed in the Operating System. For other versions of Windows, Microsoft has a downloadable ***iSCSI Software Initiator***. You can search for the ***iSCSI Software Initiator*** at Microsoft's Download Center by pointing your Internet browser to http://www.microsoft.com/downloads/en/default.aspx.

Connecting to NETConnect via iSCSI using Windows 7

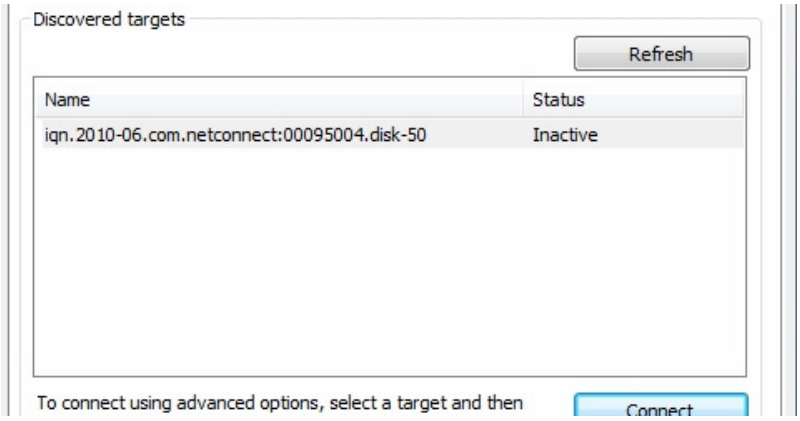
1. Click ***Start > Control Panel***.
2. If you are viewing the Control Panel by Category, click ***System and Security***, then ***Administrative Tools***. If you are viewing the Control Panel by Large or Small icons, click ***Administrative Tools***.
3. Double-click ***iSCSI Initiator***.
4. A message may appear stating the iSCSI service is not running. If this message box appears, click ***OK***.

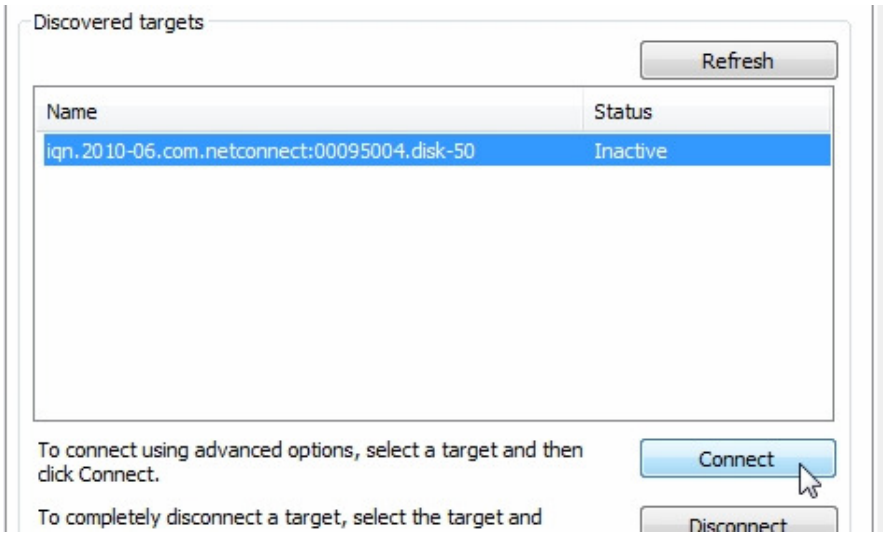

Microsoft iSCSI
The Microsoft iSCSI service is not running. The service is required to be started for iSCSI to function correctly. To start the service now and have the service start automatically each time the computer restarts, click the Yes button.
Yes
No

5. The ***iSCSI Initiator Properties*** window will appear. In the ***Targets*** tab, type the NC-000XXXXX (where XXXXX is the serial number of the NETConnect) then click the ***Quick Connect*** button.

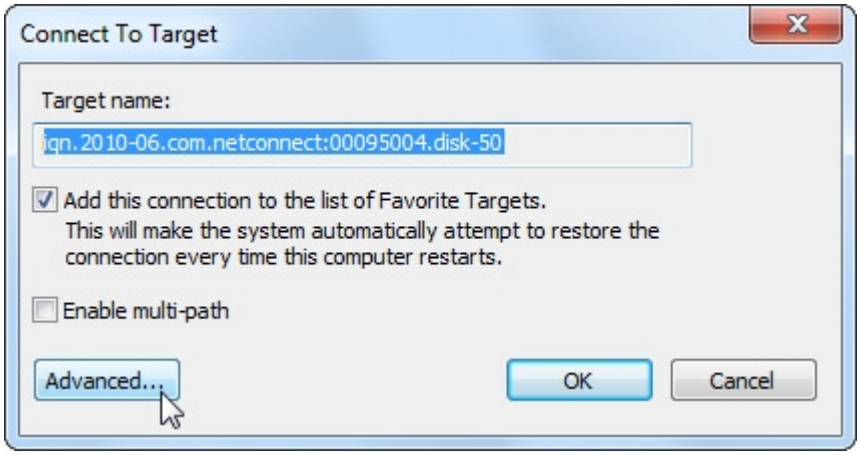


6. The NETConnect will appear in the ***Discovered targets*** section as ***Inactive***.



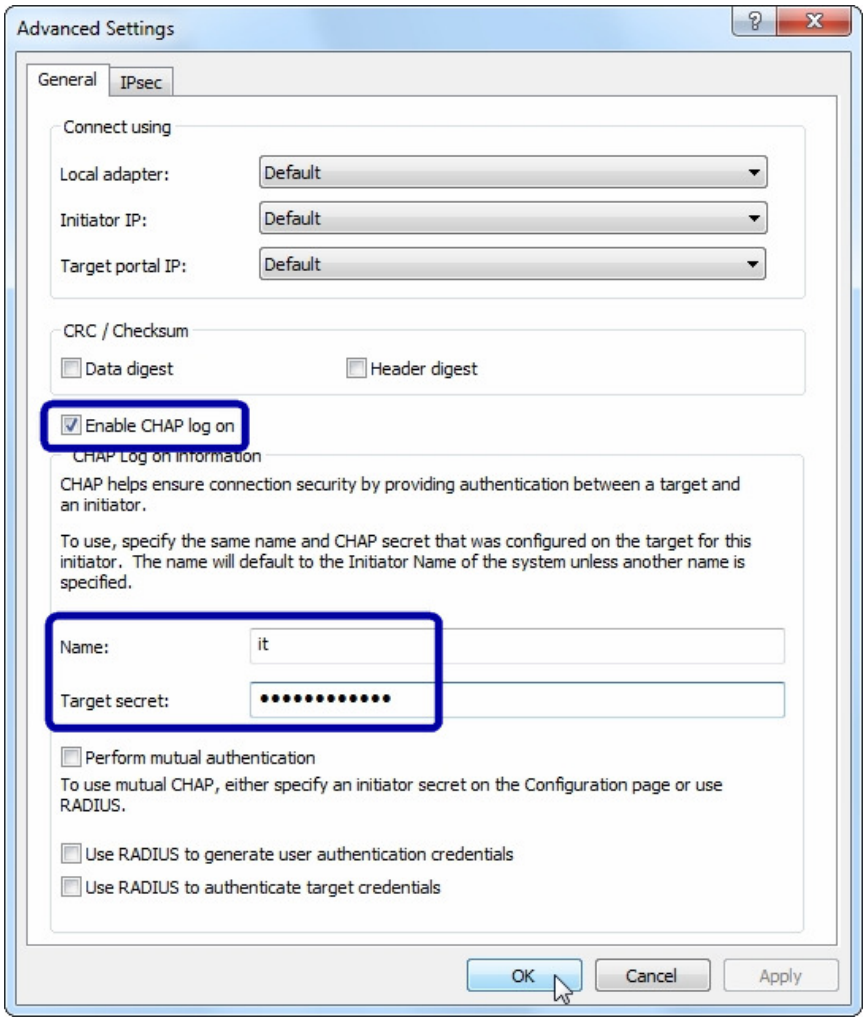


8. The ***Connect To Target*** window will appear. Click the ***Advanced*** button.

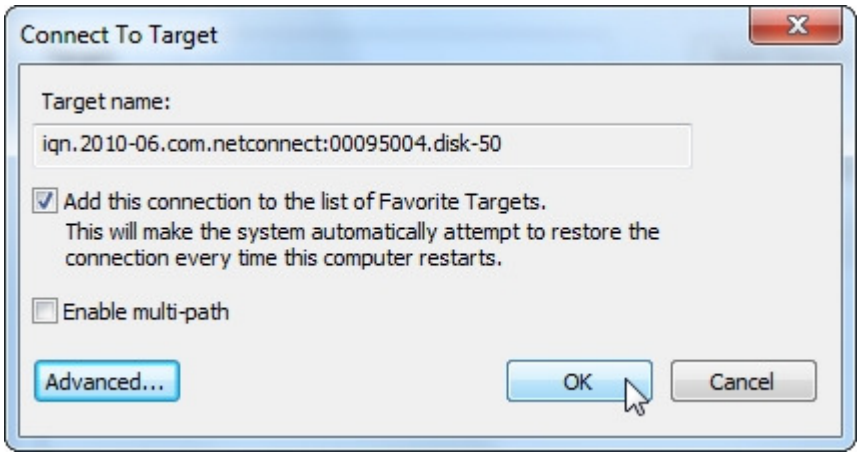

Connect To Target
Target name:
iqn.2010-06.com.netconnect:00095004.disk-50
Add this connection to the list of Favorite Targets.
This will make the system automatically attempt to restore the connection every time this computer restarts.
Enable multi-path
Advanced...
OK
Cancel

9. In the ***Advanced Settings*** window, place a check mark on ***Enable CHAP log on*** and in the ***Name*** field, type **IT** and in the ***Target secret*** field, type **itpassword12**. When finished, click the ***OK*** button.

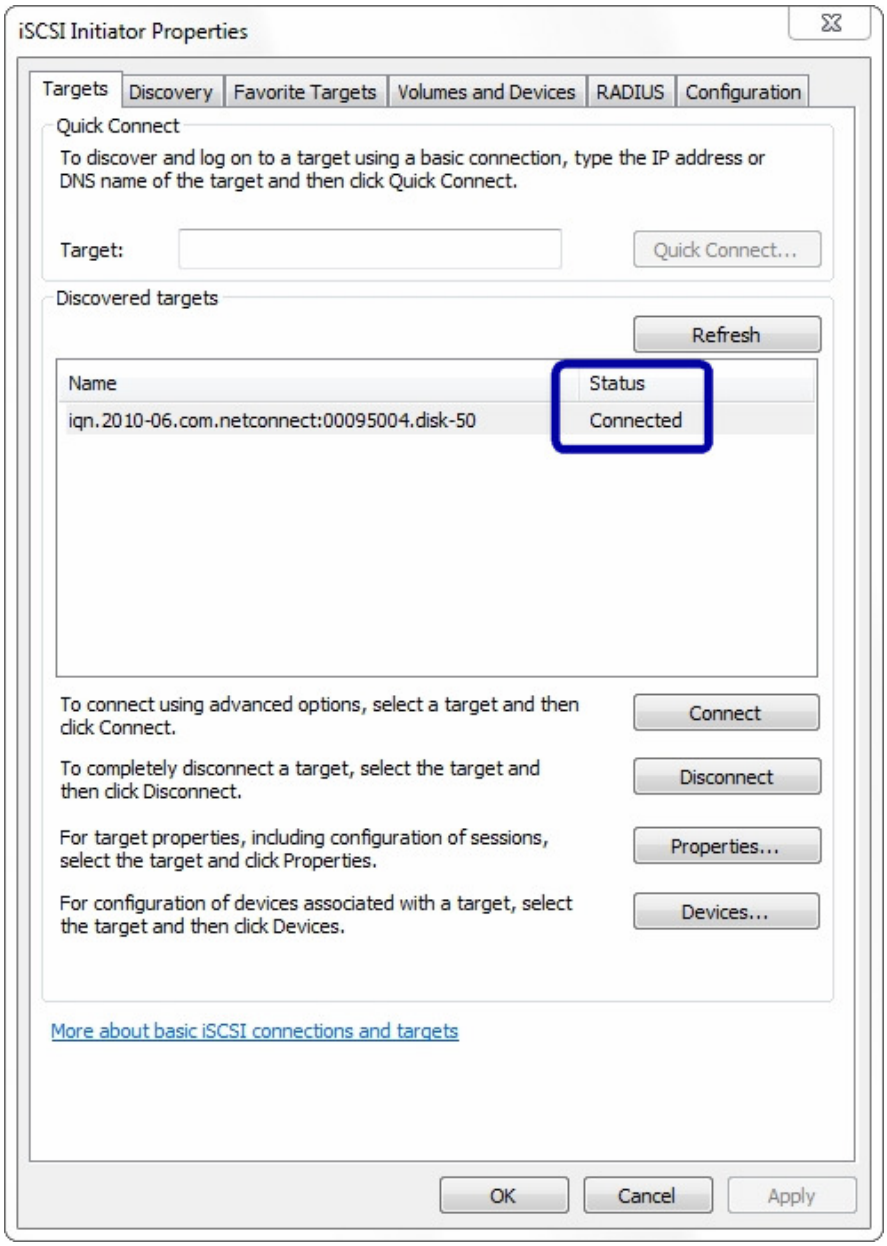
Note: The password for the "it" user account for an iSCSI connection is different than the password for the "it" user account in all other sections of this manual.


Advanced Settings
General
IPsec
Connect using
Local adapter:
Default
Initiator IP:
Default
Target portal IP:
Default
CRC / Checksum
Data digest
Header digest
Enable CHAP log on
CHAP Log on information
CHAP helps ensure connection security by providing authentication between a target and an initiator.
To use, specify the same name and CHAP secret that was configured on the target for this initiator. The name will default to the Initiator Name of the system unless another name is specified.
Name:
it
Target secret:
Perform mutual authentication
To use mutual CHAP, either specify an initiator secret on the Configuration page or use RADIUS.
Use RADIUS to generate user authentication credentials
Use RADIUS to authenticate target credentials
OK
Cancel
Apply

10. This will bring you back to the ***Connect To Target*** window. Click the ***OK*** button.


Connect To Target
Target name:
iqn.2010-06.com.netconnect:00095004.disk-50
Add this connection to the list of Favorite Targets.
This will make the system automatically attempt to restore the connection every time this computer restarts.
Enable multi-path
Advanced...
OK
Cancel

11. This will bring you back to the ***iSCSI Initiator Properties*** screen. The ***Status*** of the NETConnect should now say ***Connected***. Click the ***OK*** button to close this window.


iSCSI Initiator Properties
Targets
Discovery
Favorite Targets
Volumes and Devices
RADIUS
Configuration
Quick Connect
To discover and log on to a target using a basic connection, type the IP address or DNS name of the target and then click Quick Connect.
Target:
Quick Connect...
Discovered targets
Refresh
Name
Status
iqn.2010-06.com.netconnect:00095004.disk-50
Connected
To connect using advanced options, select a target and then click Connect.
Connect
To completely disconnect a target, select the target and then click Disconnect.
Disconnect
For target properties, including configuration of sessions, select the target and click Properties.
Properties...
For configuration of devices associated with a target, select the target and then click Devices.
Devices...
More about basic iSCSI connections and targets
OK
Cancel
Apply

12. The attached Dossier Tray will appear in Windows and will be assigned a drive letter. A drive letter will be assigned for each drive attached to either the Dossier Tray. You can now view, analyze, or copy the files from each write protected drive.

4. Administrative Functions

Administrative Functions

The NETConnect can be administered via a Command Line Interface (CLI) using a Telnet program. At each menu level, you can type **help** then press the Enter key to see the available commands. You can also type **show** to show the current configuration (if available).

See Chapter 3. Connecting NETConnect to a Network for instructions on how to connect to NETConnect using Telnet.

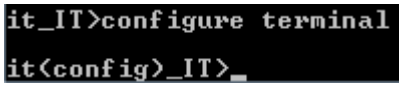
Configuring the Macro Command – Step by Step

The **macro** command is used to "push" or copy data to a PC attached to the same network the NETConnect is attached to. You can also enable the **Verify** setting as well as manage the disks on the attached Dossier Tray or MPFS (DoD wipe, format, or erase).

1. Using a Telnet program, login to the NETConnect. Once connected to the NETConnect, log in with the following credentials:

   Username: it

   Password: it



2. Type **configure terminal** and press **Enter** to go to the configuration menu.
3. Type **macro** and press **Enter** to go to the macro menu.

NOTE: The default macro (macro 1) is set to push via FTP and verify the files (**push FTP VERIFY**).

4. If the you want to change the push method (for example, you want to use CIFS instead of FTP), you will need to delete macro 1. You can delete the macro 1 by typing **delete 1** then pressing **Enter**.
5. Add a macro by using the following syntax:

Add 1 [push {CIFS, NFS, FTP} [VERIFY]|delete|[format,erase,dodwipe] {D1-D4,JBOD}]

NOTE: The macro commands are case sensitive. For example, if you want to push using CIFS and you want to verify the data, type the following (then press **Enter)**:

add 1 push CIFS VERIFY

NOTE: You can add more macro commands. The NETConnect will process macro 1, then macro 2, then macro 3, etc.

Configuring Users – Step by Step

Administrators can setup a unique configuration for each user, including assigning different levels of access for each username. Users can then login with their own username and password and configure the NETConnect or push data, depending on which user group they are assigned to.

There are two different user groups available on the NETConnect:

- **itgrp** – This group is designed for users who will be configuring the NETConnect and use the push feature and for System Operators and is designed to be used by IT administrators.
- **guestgrp** – This group has very limited functionality and is designed for users who will be connecting to the NETConnect as a NAS.

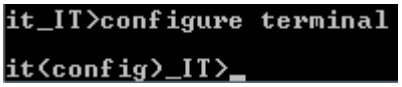
Follow the instructions below to configure users:

1. Using a Telnet program, login to the NETConnect. Once connected to the

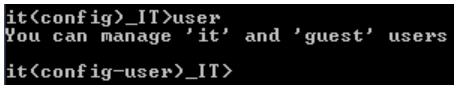
NETConnect, log in with the following credentials:

Username: it

Password: it



2. Type **configure terminal** and press **Enter** to go to the configuration menu.



3. Type **user** and press **Enter** to go to the user configuration menu.

4. Type **show** and press **Enter** to show the current list of configured users.
5. To add a user, type **add # username usergroup** then press **Enter** where # is the user number you want to use, **username** is the name of the user, and **usergroup** is the group you would like them to be in.

   For example, if you want a user named John Doe with a login of "jdoe", in the 3rd user slot and in the IT group, type **add 3 jdoe itgroup** and press **Enter**.

6. Type **show** and press **Enter** to review the changes you have made.
7. Type **config commit** and press **Enter** to save the changes even after turning off the NETConnect. If you do not perform this step, the next time you turn on the NETConnect, this user will not be able to login.

   NOTE: Using the "config commit" command will take a few seconds to save. The Ready light on the NETConnect control panel will light up solid green when the process is complete. You can also go to the top level menu and type **status** to see if the process has completed. The "status" command is found in the root menu. Use the **exit** command to move up one menu.

Pushing Data to a PC or Server using CIFS – Step by Step

In order to configure NETConnect to push data to a PC or server on the same network using CIFS protocol, follow these steps:

1. Using a Telnet program, login to the NETConnect. Once connected to the NETConnect, log in with the following credentials:

```
it_IT>configure terminal

it(config)_IT>_
```

```
it(config)_IT>mount cifs 1

it(config-mount-cifs-1)_IT>
```

```
it(config-mount-cifs-1)_IT>show
        1) Path='//win7asrock/CIFS'
        1) User='logicube'
        1) Password='logicube'
        1) Enabled='no'

it(config-mount-cifs-1)_IT>
```

Username: it

Password: it

2. Type **configure terminal** and press **Enter** to go to the configuration menu.
3. Type **mount cifs 1** and press **Enter** to go to the cifs (Common Internet File System) network mount menu.
4. Type **show** and press **Enter** to show the current cifs configuration. There are four items to configure:
    a. Path
    b. User
    c. Password
    d. Enabled
5. Type **path** //**ipaddress**/**sharedname** and press **Enter** to enter the path where the NETConnect will push the files to. The "ipaddress" is the IP address of the computer you want the NETConnect to push files to, and "sharedname" is the name of the shared folder on that computer.
6. Type **user username** and press **Enter** where "username" is the name of an authorized user who has access to the shared folder on the computer you want the NETConnect to push files to.
7. Type **password pass** and press **Enter** where "pass" is the password of the username set in step 6.
8. Type **enabled yes** and press **Enter** to enable this configuration.
9. Type **show** and press **Enter** to review the changes you have made.
10. Type **config commit** and press **Enter** to save the changes even after turning off the NETConnect.

NOTE: Using the "config commit" command will take a few seconds to save. The Ready light on the NETConnect control panel will light up solid green when the process is complete. You can also go to the top level menu and type **status** to see if the process has completed. The "status" command is found in the root menu. Use the **exit** command to move up one menu.

11. You can now "push" the data by using one of the two ways found in the section **Pushing Data** found in **Chapter 3. Connecting NETConnect to a network**.

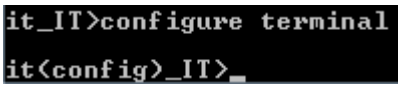
Pushing Data via a FTP – Step by Step

The NETConnect can also be configured to push data to FTP server using the FTP protocol. The steps below show how to configure the NETConnect to push data via FTP:

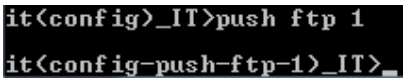
1. Using a Telnet program, login to the NETConnect. Once connected to the NETConnect, log in with the following credentials:

   Username: it

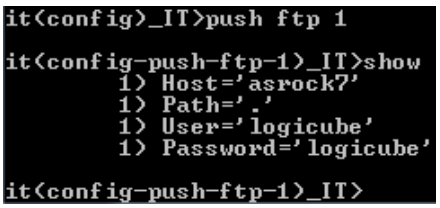
   Password: it



2. Type **configure terminal** and press **Enter** to go to the configuration menu.



3. Type **push ftp 1** and press **Enter** to go to the FTP (File Transfer Protocol) menu.



4. Type **show** and press **Enter** to show the current FTP configuration. There are five items to configure:
   a. Host
   b. Path
   c. User
   d. Password
   e. Enabled
5. Type **host hostname** and press **Enter** where "hostname" is the name of the FTP server you want the NETConnect to connect to.
6. Type **path pathname** and press **Enter** where "pathname" is the name of the path of the upload folder on the FTP site.
7. Type **user username** and press **Enter** where "username" is the name the NETConnect will use to log in to the FTP server.
8. Type **password pass** and press **Enter** where "pass" is the password of the username set in step 6.
9. Type **enabled yes** and press **Enter** to enable this configuration.
10. Type **show** and press **Enter** to review the changes you have made.

11. Type **config commit** and press **Enter** to save the changes even after turning off the NETConnect. If you do not perform this step, the next time you turn on the NETConnect, this user will not be able to login.

    NOTE: Using the "config commit" command will take a few seconds to save. The Ready light on the NETConnect control panel will light up solid green when the process is complete. You can also go to the top level menu and type **status** to see if the process has completed. The "status" command is found in the root menu. Use the **exit** command to move up one menu.

12. You can now "push" the data by using one of the two ways found in the section **Pushing Data** found in **Chapter 3. Connecting NETConnect to a network**.

Verification

When pushing or copying the data from the Dossier Tray or MPFS via NETConnect, the data pushed or copied can be verified. Verification can be set in the **configure terminal** menu under the **macro** command.

When Verify is set in the **macro** command with the **push** setting, the NETConnect will copy or push the data from the attached Dossier Tray or MPFS to the location specified. After each file is pushed or copied, the files will be verified one of two ways:

- **Remote verification –** If the files pushed or copied are DD files, NETConnect will perform a server side script that will compute the MD5 hash for each file that was copied. NETConnect will then compare that value with the MD5 value stored on the log file in the Dossier Tray or MPFS that was created during the capture.

  Note: This method will only work if the original capture was performed on the Dossier using the DD Image settings with the Verify settings set to File+V. For more information on Dossier settings, please refer to the section ***Special Settings for***

DD Image Mode in Chapter 3 of the Dossier's User's Manual

Important note: This method will also require the installation of a script on the computer where the files are being pushed or copied to. See the section ***Installing the server side script*** in this chapter for step-by-step instructions on how to install this script.

- **Read back verification –** If the files pushed or copied are E01 files or DD files without file verification (if the capture was performed on the Dossier using the DD Image settings and the Verify settings were set to anything except for File+V), the NETConnect will perform a byte-by-byte comparison of each file.

Installing the server side script

NOTE: The installation of the server side script is meant for Systems Administrators or your IT department.

The server side script is a python script found on the NETConnect DVD and requires that a python interpreter be installed on the computer where the files are pushed or copied to.

1. Download python 2.7 from http://www.python.org. Do not download python version 3.x. You can download the 32-bit or 64-bit versions for Windows, depending on the Operating System installed on the computer you will be pushing or copying data to.
2. Install the python interpreter using the default installation options.
3. Copy ***xmlrpc_threaded_hash_server.py*** from the NETConnect DVD to any folder on the computer where you will be pushing or copying the data to.
4. Create a shortcut of the command prompt (cmd.exe) and place it in the startup folder (for example: C:\Users\Username\AppData\Roaming\Microsoft\Windows\Start Menu\Programs\Startup)
5. Right-click on the Command Prompt shortcut and go to Properties. The Command Prompt Properties window should appear.

6. Go to the Shortcut tab and in the ***Target*** field, type the following (note there is a space after /K):

%windir%\system32\cmd.exe "C:\Python27\python.exe /K C:\script\xmlrpc_threaded_hash_server.py 9999 D:\upload"

NOTE: Change ***C:\script*** to the location where you copied the ***xmlrpc_threaded_hash_server.py*** file in step 3. Also, change ***D:\upload*** to the directory or folder you will be pushing or copying data to.

7. Test the script by running the shortcut you created in the Startup folder. A Command Prompt window should appear and show:

Servicing port:9999
At root directory: D:\Upload

(where D:\Upload will be the directory or folder you will be pushing or copying data to)

8. Reboot the computer and the script should start automatically on every reboot. You will see the command prompt window appear letting you know the script is ready to run.

Enabling Verification – Step-by-step:

1. Using a Telnet program, login to the NETConnect. Once connected to the NETConnect, log in with the following credentials:

Username: it

Password: it

2. Type **configure terminal** and press **Enter** to go to the configuration menu.
3. Type **macro** and press **Enter** to go to the macro menu.

NOTE: The default macro (macro 1) is set to push via FTP and verify the files (**push FTP VERIFY**).

4. If the you want to change the push method (for example, you want to use CIFS instead of FTP), you will need to delete macro 1. You can delete the macro 1 by typing **delete 1** then pressing **Enter**.
5. Add a macro by using the following syntax:

NOTE: The macro commands are case sensitive. For example, if you want to push using CIFS and you want to verify the data, type the following (then press **Enter)**:

Add 1 [push {CIFS, NFS, FTP} [VERIFY]|delete|[format,erase,dodwipe] {D1-D4,JBOD}]

For example, if you want to push using FTP, and you want to verify the data, type the following (then press **Enter)**:

Add 1 push FTP VERIFY

You should see a confirmation showing: Command='push FTP VERIFY'

NOTE: You can add more macro commands. The NETConnect will process macro 1, then macro 2, then macro 3, etc.

Formatting, Erasing, or Wiping (DoD M-5220.22M)

Disk management which includes formatting, erasing, or wiping drives (conforming to the Department of Defense M-5220.22M standards) is available through the NETConnect. There are two ways of performing disk management:

- Through the macro command
- Through the disks menu

Disk Management through the Macro command

After pushing or transferring the data from the Dossier Tray or MPFS via NETConnect, the drives in the Dossier Tray or MPFS can be formatted, erased, or wiped (conforming to the Department of Defense M-5220.22M standards). These three options can be set in the **configure terminal** menu under the **macro** command.

delete – This function simply deletes the data in the destination drive in the Dossier Tray (or JBOD drives in an MPFS).

format - This function formats the destination drive in a Dossier Tray (or JBOD drives in an MPFS) with a single FAT32 partition. Performing this function

formats the drive(s) by zeroing the first and second FAT of the drive(s).

erase – This function erases the destination drive in a Dossier Tray (or JBOD drives in an MPFS) with a single FAT32 partition. Performing this function will perform a single pass erase of the drive(s).

dodwipe – This function performs a seven pass wipe of the destination drive in a Dossier Tray (or JBOD drives in an MPFS). This method conforms to the DoD M-5220.22M standard.

To set any one of these 3 functions, follow these steps:

1. Using a Telnet program, login to the NETConnect. Once connected to the NETConnect, log in with the following credentials:

   Username: it

   Password: it

2. Type **configure terminal** and press **Enter** to go to the configuration menu.
3. Type **macro** and press **Enter** to go to the macro menu.
4. Delete the current macro by typing **delete 1** then press **Enter**.
5. Add a macro by using the following syntax:

Add 1…N [push {CIFS, NFS, FTP} [VERIFY]|delete|[format,erase,dodwipe] {D1-D4,JBOD}]

Typically there is already one macro set up (for example **"push FTP VERIFY"**). You can add a second macro to perform a format, erase, or DoD Wipe after the push and verify are complete.

Here are some examples:

add 2 dodwipe JBOD

add 2 format D1

When the macro command is run or the Start button is pressed, the NETConnect will run each of the macros in order (1, 2, etc.). If your first macro

was to push via FTP and the second macro is to format D1, it will push via FTP first, then format D1.

NOTE: The commands are case sensitive. D1 and D2 are used with the Dossier Tray. When using MPFS, JBOD is used.

Disk Management through the Disks menu

The drives in the Dossier Tray or MPFS can be formatted, erased, or wiped (conforming to the Department of Defense M-5220.22M standards). These three options can be set in the **root** menu under the **disks** command.

wipedod – This function performs a seven pass wipe of the destination drive in a Dossier Tray (or JBOD drives in an MPFS). This method conforms to the DoD M-5220.22M standard.

quickerase – This function erases the destination drive in a Dossier Tray (or JBOD drives in an MPFS) with a single FAT32 partition. Performing this function will perform a single pass erase of the drive(s).

format32 - This function formats the destination drive in a Dossier Tray with a single FAT32 partition. Performing this function formats the drive(s) by zeroing the first and second FAT of the drive(s).

> **NOTE:** At this time, the Format32 function for Dossier Tray will only format D1 or D2, but not both.

formatJBOD – This function formats the drives in the MPFS with a single FAT32 partition per drive. Performing this function formats the drive(s) by zeroing the first and second FAT of the drive(s).

To perform any one of these 3 functions, follow these steps:

1. Using a Telnet program, login to the NETConnect. Once connected to the NETConnect, log in with the following credentials:

   Username: it

   Password: it

2. Type **disks** then press **Enter** to go to the Disks menu.
3. Type in one of the following commands (case sensitive):

wipeDOD D1 – performs a DoD wipe on the drive in the D1 position of the Dossier Tray.

wipeDOD D2 – performs a DoD wipe on the drive in the D2 position of the Dossier Tray.

wipeDOD JBOD – performs a DoD wipe on all the drives in the MPFS.

quick erase D1 – performs a quick erase on the drive in the D1 position of the Dossier Tray.

quick erase D2 – performs a quick erase on the drive in the D2 position of the Dossier Tray.

Quick erase all – performs a quick erase of both drives in the D1 and D2 position of the Dossier Tray

quick erase JBOD – performs a quick erase on all the drives in the MPFS.

format32 D1 – formats the drive in the D1 position of the Dossier Tray.

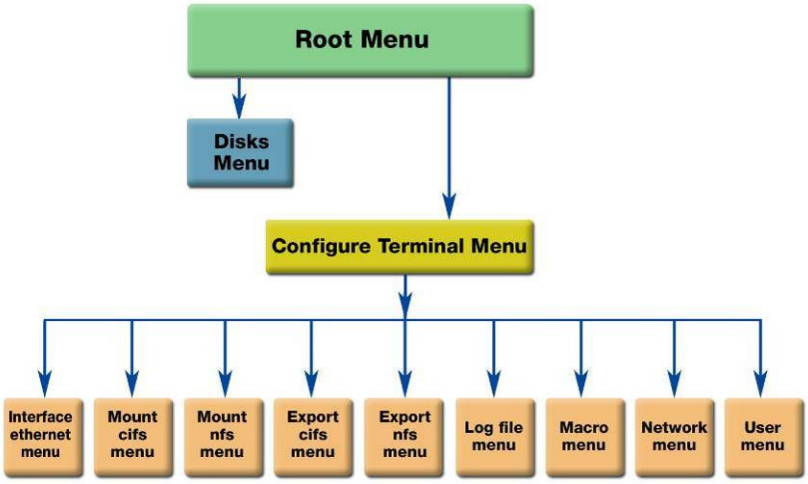
format32 D2 – formats the drive in the D2 position of the Dossier Tray.

formatJBOD – formats all the drives in the MPFS.

NOTE: The commands are case sensitive. D1 and D2 are used with the Dossier Tray. When using MPFS, JBOD is used.

Command Line Interface Menus

The following details each of the Command Line Interface (CLI) menus. Below is a visual diagram of the menus.



Root menu – username_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
configure terminal	Configure from the terminal
show log	Logging display
disks	Disk management
status	Get status of background jobs
macro	Run macro commands defined in database
clean children	Cancel all background tasks
version	Show version of all components
upgrade ftp	Upgrade software with means of ftp

Disks menu – username(config-Disks)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
yes	Confirmation form
quick erase	Disks management
wipeDOD	Disks management
format32	Disks management
formatJBOD	Disks management

Configure Terminal menu – username(config)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
interface ethernet	[0..N]; Configure ethernet interface N
mount cifs	[1..N]; Configure cifs network mount N
mount nfs	[1..N]; Configure nfs network mount N
push ftp	[1..N]; Configure ftp push destination N
export cifs	[D1,D2,D3,D4,JBOD]; Configure cifs export
export nfs	[D1,D2,D3,D4,JBOD]; Configure nfs export
Export iscsi	[D1,D2,D3,D4,JBOD]; Configure iscsi export
log file	Configure file logging
macro	Edit macro definition
network	Edit network settings
user	Manage users
config commit	Commit configuration changes to persistent database
config default	Revert back to factory default configuration
config show	Show current configuration
upgrade ftp	Configure upgrade via FTP

Ethernet menu – username (config-eth0)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
config	+[static | dhcp]
address	+ip address
mask	+network mask
gateway	+gateway address
mtu	+mtu size
show	display current setting

Mount cifs menu – username(config-mount-cifs-1)_IT>	
help	Show available commands

quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
path	Set network path
user	Set user for mount
password	Set password
enable	Enable mount setting
show	display current setting

Mount NFS menu – username(config-mount-nfs-1)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
path	Set network path
enable	Enable mount setting
show	Display current setting

FTP menu – username(config-push-ftp-1)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
host	Set ftp server
path	Set ftp path
user	Set ftp user
password	Set ftp password
show	Display current setting

Export cifs menu – username(config-export-cifs-JBOD)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands

share	Name of network share
access	Access restrictions
enable	Enable the export
show	Display current setting

Export nfs menu – username(config-export-nfs-JBOD)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
access	Access restrictions
enable	Enable the export
show	Display current setting

Macro menu – username(config-macro)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
add	+1..N [push {CIFS,NFS,FTP} [VERIFY]|delete|[format,erase,dodwipe] {D1-D4,JBOD}]
delete	+1..N
show	Show macro definitions

Network menu – username(config-network)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
hostname	+hostname
nameserver	+ip
domain	+domain name
show	Show network settings

User menu – username(config-user)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
add	+1..N USER GROUP PASSWD
del	+1..N
show	Show users

Upgrade FTP menu – username(config-upgrade-ftp)_IT>	
help	Show available commands
quit	Disconnect
logout	Disconnect
exit	Exit from current mode
history	Show a list of previously run commands
host	Set upgrade ftp server
file	Set upgrade file
user	Set ftp user
password	Set ftp password
show	Show upgrade configuration

Restoring All Settings to Factory Defaults

There are two ways to reset the NETConnect to have all settings restored to its factory defaults:

1. Reset button
    a. In the back of the NETConnect, below the fan on the right side, there is a small, recessed button. Press and hold the reset button until the Ready LED blinks (about 5 seconds).
    b. Release the reset button and wait for the Ready LED to turn solid green.
2. Command Line Interface
    a. Login to the NETConnect with the following credentials (or log in with

any username and password belonging to the **itgroup**):

Username: it

Password: it

b. Go to the **configure terminal** menu.

c. Type **config default** and press **Enter**. You can check the status of this process by typing **exit** and pressing **Enter**, then typing **status** and pressing **Enter** from the root menu.

Application Notes Regarding Push Performance

Introduction

Testing has shown that FTP protocol is leaner and faster than either network file systems like NFS or CIFS. The guidelines below may further maximize the network throughput and achieve near gigabit Ethernet speed for the uploads.

Jumbo Frames

Modern gigabit NIC typically offers capabilities of increasing the packet payload size, which it typically referred to as 'Jumbo Frames'. The reason for introducing this feature is that LAN environments are typically near loss-free as opposed to WAN where packet loss is far more frequent. Therefore, if operating in a LAN environment, enabling jumbo frames is preferable since the increased packet size has the benefit of less overhead per packet assuming that packet loss is negligible.

The standard payload size is 1500 bytes/packet, and jumbo frames are usually available in increments of 1k, i.e. 2k,3k,...9k etc.

The NetConnect NIC offers maximum Jumbo Frame of 6000 bytes/packet. A common term for payload size is 'MTU size'

Prerequisites

- Upload server has to be reasonably fast in general, i.e. mid-range workstation of today.

- Upload server has to be equipped with a NIC capable of 6K MTU size or larger, i.e. MTU size.
- Destination drive for upload should preferably not be the OS drive, but a dedicated drive solely for upload purposes.
- Destination drive should be fast, i.e. equivalent of the speed of the popular Seagate 7200.12 500G, which boasts maximum rated speed up to 125 MB/s for sequential access.
- The NetConnect-Tray configuration is faster than NetConnect-MPFS due to the JBOD interface found on MPFS, therefore one would use the first configuration for maximum throughput.

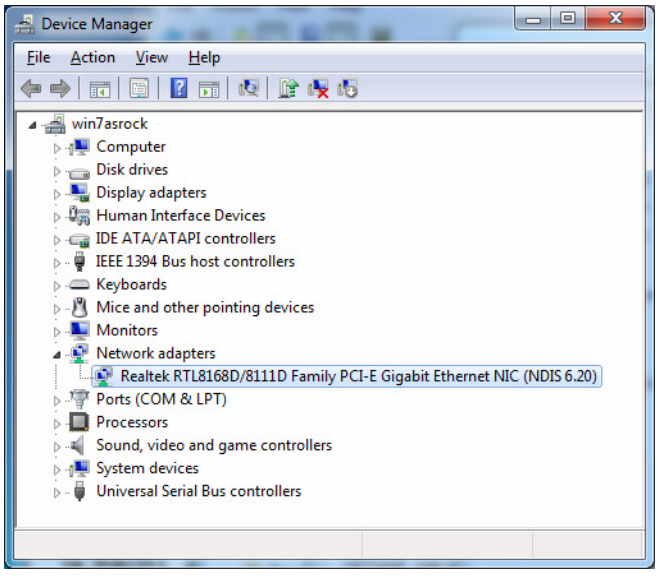
Enabling Jumbo Frames

NetConnect

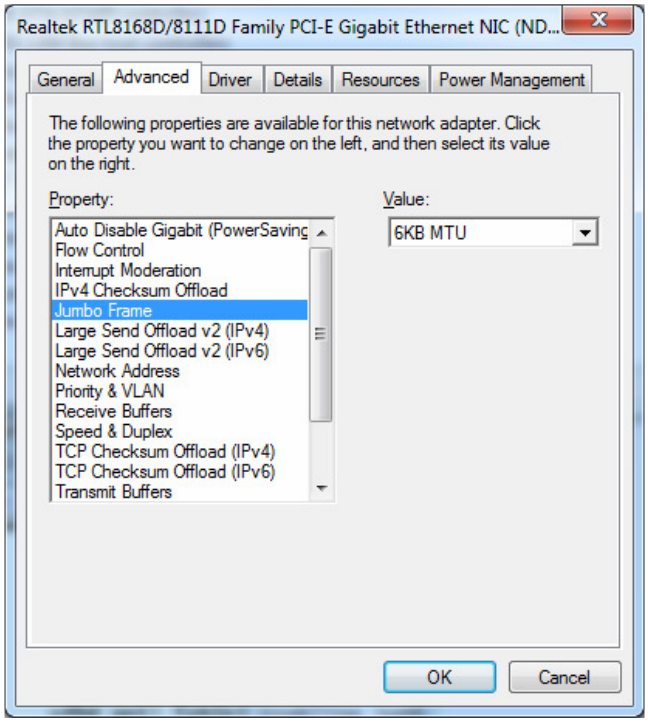
1. Bring up a Telnet CLI.
2. Enter the configuration menu with 'configure terminal' command.
3. Enter the ethernet configuration menu with 'interface ethernet 0'.
4. Now enter the command 'mtu 6000' and verify with 'show' and exit back one step with 'exit'.
5. Commit the change with 'config commit'.

Windows

1. First bring up the 'Device Manager' and identify the NIC device



2. Open up Properties for the NIC device and change to the 'advanced' tab. Scroll down the list of advanced options and identify the entry that defines either Jumbo Frames or MTU Size and set it to 6k or above.

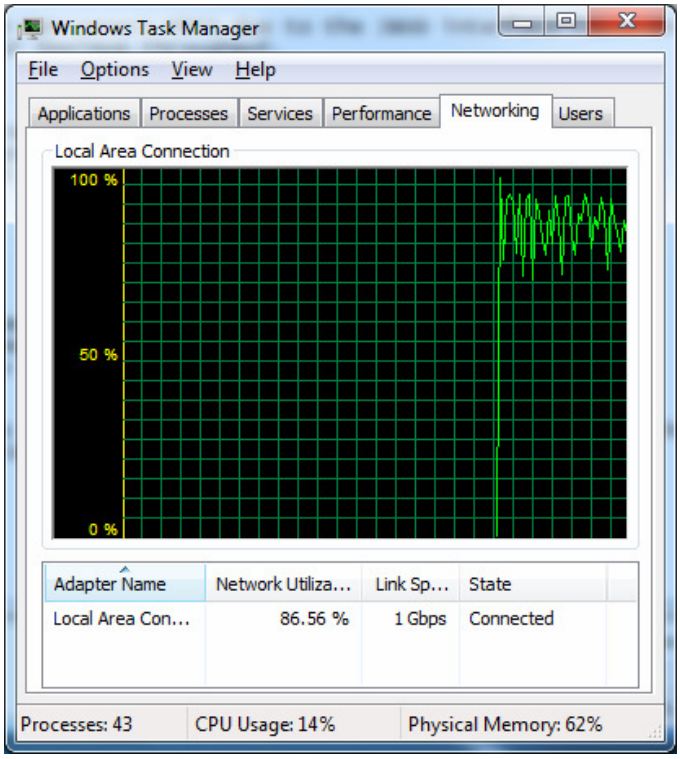


Linux

1. Start a root shell or make use of the 'sudo' command in the following
2. Verify current MTU size with the 'ifconfig' command, typically you'll see 1500 as MTU size
3. Change the MTU size with 'sudo ifconfig eth0 mtu 6000' and verify with 'ifconfig'

FTP Server Tuning

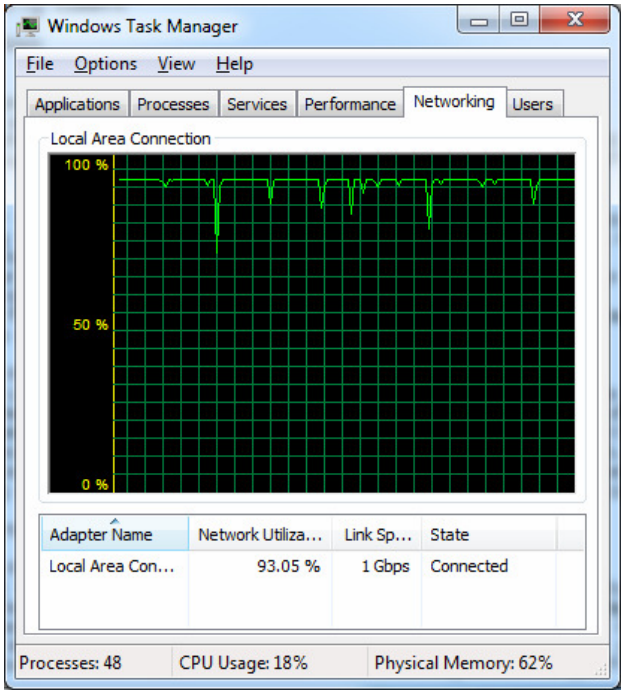
Depending on which FTP server used and its feature set, it may or may not be possible to fine tune the FTP server for the purpose of maximizing throughput.



For instance, if fluctuating network speeds are noticed as seen in the picture above, the following can be attempted:

1. Increase the buffer sizes for the FTP server. Exactly how to do this depends on the FTP server used.
2. Try another, faster, destination hard drive.

Ideally near flat line network utilization speeds should be noticed, as seen below. This means that network is used to the max and hard drive can keep up with the network throughput.



FTP Server Destination Drive File Format (Linux)

The standard file system for Linux is currently ext3 or ext4. It seems to be the prevailing understanding that ext4 performs better than ext3. It is therefore recommended to use ext4 or possibly xfs.

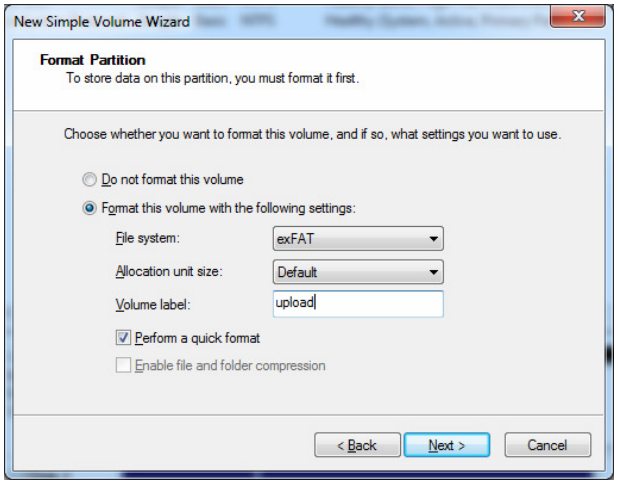
A further performance improvement that can be attempted is to format the ext4 partition without the 'journaling' feature, which some consider unnecessary for a dedicated drive only used for uploads. Also, since we know that the files upload are all of quite significant size each, the 'extent' feature for the file system can be enabled as it helps and improves dealing with large files. The following formatting command can be used, assuming the partition is /dev/sdb1:

$ sudo mkfs.ext4 -O ^has_journal,extent /dev/sdb1

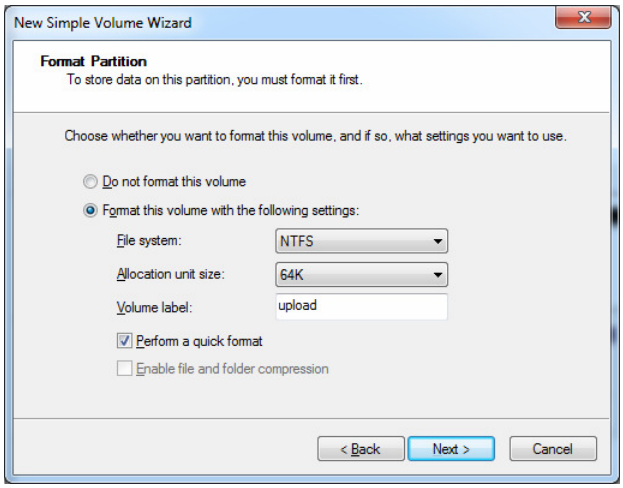
FTP Server Destination Drive File Format (Windows)

Sometimes it is observed that NTFS could be the bottleneck in high-throughput situations. As a an experiment, the destination file system

could be switched from NTFS to FAT32 or the newer exFAT.


New Simple Volume Wizard
Format Partition
To store data on this partition, you must format it first.
Choose whether you want to format this volume, and if so, what settings you want to use.
Do not format this volume
Format this volume with the following settings:
File system:
exFAT
Allocation unit size:
Default
Volume label:
upload
Perform a quick format
Enable file and folder compression
< Back
Next >
Cancel

Also, since we know that the NetConnect will always upload files of significant size, larger than default 'allocation size' can be set, since it decreases overhead when dealing with large files.


New Simple Volume Wizard
Format Partition
To store data on this partition, you must format it first.
Choose whether you want to format this volume, and if so, what settings you want to use.
Do not format this volume
Format this volume with the following settings:
File system:
NTFS
Allocation unit size:
64K
Volume label:
upload
Perform a quick format
Enable file and folder compression
< Back
Next >
Cancel

Compare the throughput numbers between exFAT, FAT32 and NTFS and make a judicious choice, which file system suits your needs the best, as a standard optimization, NTFS with 64K allocation size can be tested.

5. Live Acquisition

Overview

The Live Acquisition function allows you to capture a snapshot of what is currently running in the suspect PC's memory at the time of acquisition. Users can save the snapshot of the PC's volatile memory to both a flash drive and the Dossier Tray or MPFS connected to a NETConnect.

Creating a Live Acquisition USB Flash Drive

To create a Live Acquisition USB Flash Drive users must first download a free software and utilities package called **moonsols_windows_memory_toolkit community edition.** The website URL to obtain this software is listed below.

There are two types of Live Acquisition USB flash drives that can be created. One that uses DD Images and another that uses the E01 file format.

Note: If you wish to use the E01 file format for Live Acquisition USB flash drives you must have Guidance WinEN software. If you are unsure if you have this software, please contact Guidance Software for more information on how to obtain it.

Software and Hardware Requirements

The following are required to create the Live Acquisition USB flash drive:

1. One USB flash drive. The recommended size is 8 GB or larger.

Note: The size of the USB flash drive must be larger than the amount of RAM on the PC being acquired. For example, if you are acquiring from a

PC that has 8GB of RAM, you must use a USB flash drive larger than 8GB.

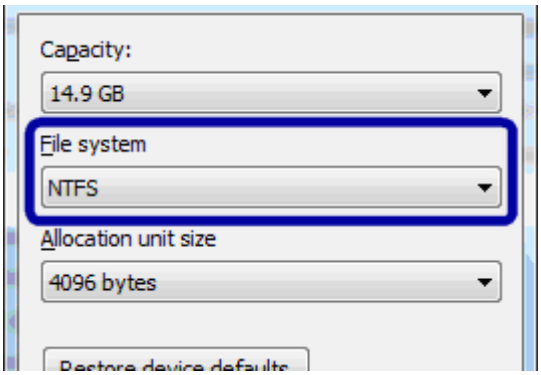
2. Logicube's USB utility – A file called **mem_capture.exe** found on the DVD that came with your NETConnect.
3. The file **usbapp.conf** which is also found on the DVD that came with your NETConnect.
4. One of the following:
    a. For DD Images - **moonsols_windows_memory_toolkit_community_edition.zip**. This freeware software can be downloaded from the following web site:

http://moonsols.com/component/jdownloads/view.download/3/2

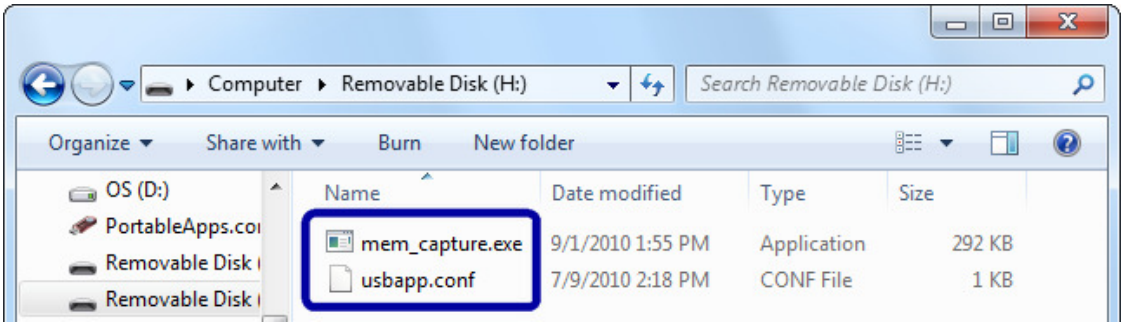
    b. WinEn from Guidance Software.

Step-By-Step Live Acquisition USB Creation

1. Format the USB flash drive using the NTFS file system.

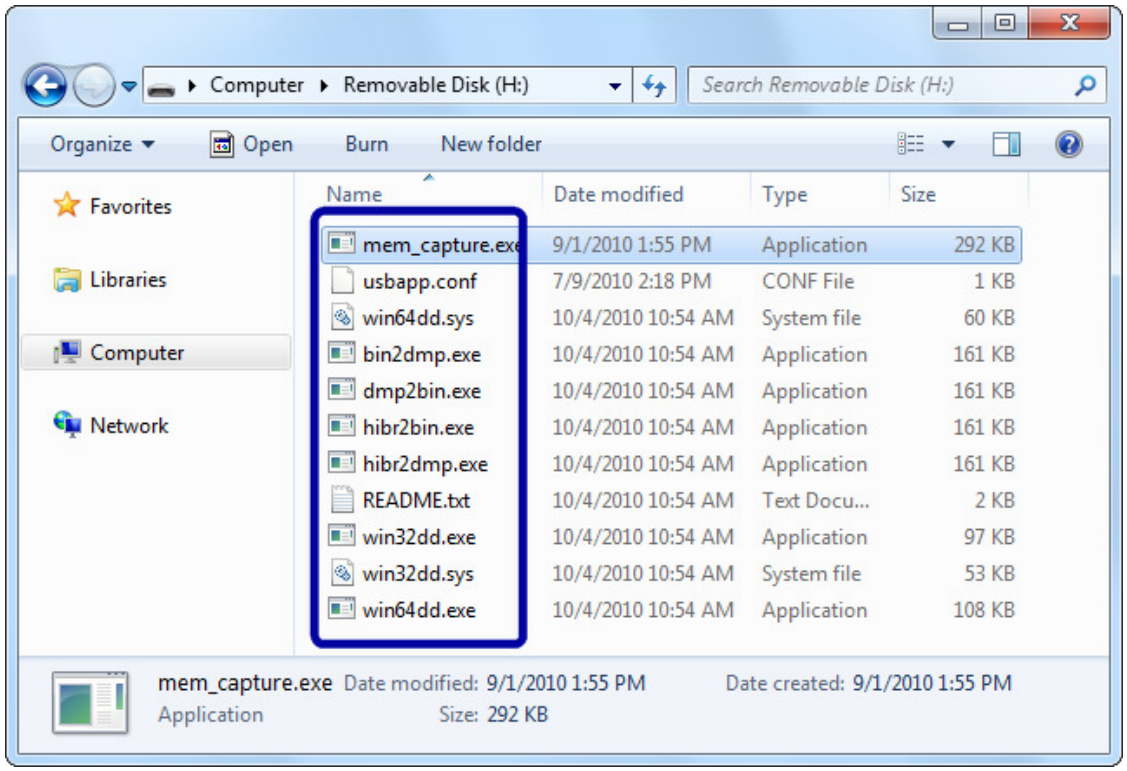


2. Copy the **mem_capture.exe** and **usbapp.conf** files from the NETConnect DVD to the root of the USB flash drive. The USB flash drive should now contain the two files seen below.



3. For DD Images, follow step 3a. For E01 file format, follow step 3b.

a. Unzip the contents of **moonsols_windows_memory_toolkit _community_edition.zip** to the root of the USB flash drive.

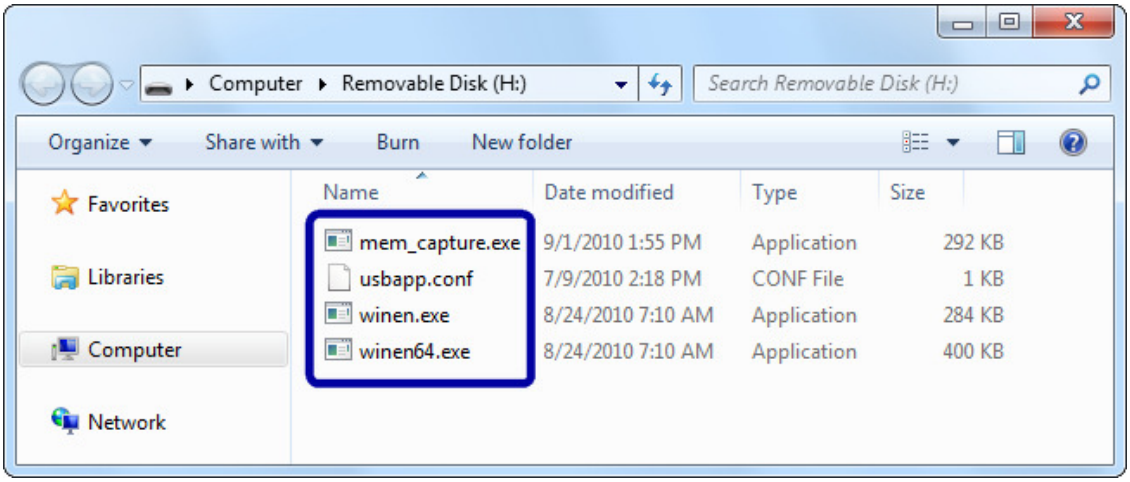

Computer ▸ Removable Disk (H:)
Search Removable Disk (H:)
Organize
Open
Burn
New folder
Favorites
Libraries
Computer
Network
Name
Date modified
Type
Size
mem_capture.exe 9/1/2010 1:55 PM Application 292 KB
usbapp.conf 7/9/2010 2:18 PM CONF File 1 KB
win64dd.sys 10/4/2010 10:54 AM System file 60 KB
bin2dmp.exe 10/4/2010 10:54 AM Application 161 KB
dmp2bin.exe 10/4/2010 10:54 AM Application 161 KB
hibr2bin.exe 10/4/2010 10:54 AM Application 161 KB
hibr2dmp.exe 10/4/2010 10:54 AM Application 161 KB
README.txt 10/4/2010 10:54 AM Text Docu... 2 KB
win32dd.exe 10/4/2010 10:54 AM Application 97 KB
win32dd.sys 10/4/2010 10:54 AM System file 53 KB
win64dd.exe 10/4/2010 10:54 AM Application 108 KB
mem_capture.exe Date modified: 9/1/2010 1:55 PM Date created: 9/1/2010 1:55 PM
Application Size: 292 KB

Live Acquisition USB Flash Drive using DD Image

b. Copy the following files to the root of the USB flash drive:

   a. winen.exe

   b. winen64.exe



Live Acquisition USB Flash Drive using WinEn (E01) from Encase

Performing a Live Acquisition

To perform a Live Acquisition, follow these steps:

1. If you have not done so, create a Live Acquisition USB flash drive by following the steps in the previous section of this chapter.
2. Attach a Dossier Tray or MPFS to the NETConnect.
3. Attach the NETConnect to the same network that the suspect's PC is connected to. If the suspect's PC is not connected to a network, you can attach the NETConnect directly to the suspect's PC if it has a network card.
4. Turn the NETConnect on and wait for the Ready LED to turn on.
5. With the suspect's PC running, attach the Live Acquisition USB flash drive to the suspect's PC.
6. Edit the file **usbapp.conf** through Notepad and make changes to the following values as needed:

WINDD: Entering *Yes* will enable the WinDD application if you created the Live Acquisition USB flash drive with the WinDD software. The value for this option can only be *Yes* or *No*.

WINEN: Entering *Yes* will enable the WinEN application if you created the Live Acquisition USB flash drive with the WinEN software. The value for this option can only be *Yes* or *No*.

FTP-HOST: This should be the NETConnect's name (for example, NC-000XXXXX) where XXXXX is the NETConnect's serial number.

FTP-USER: It is recommended that this value be left as the default *it* value.

FTP-PW: It is recommended that this value be left as the default value unless the *FTP-USER's* password was changed.

FTP-UPATH: Enter one of the following, depending on where you want to save the data. Please make sure there is space on the drive you want to use.

/media/D1_p1 To save to D1 on the Dossier Tray.

/media/D1_p2 To save to D2 on the Dossier Tray.

/media/JBOD_p2 To save to the first drive on the MPFS.

/media/JBOD_p3 To save to the second drive on the MPFS.

/media/JBOD_p4 To save to the third drive on the MPFS.

/media/JBOD_p5 To save to the fourth drive on the MPFS.

SPLIT-SIZE: **Do not change this value**. Depending on how much RAM the computer that is being acquired has, the output DD or E01 files may be split to multiple files. The DD Image or E01 file will be split on the attached Dossier Tray or MPFS. The file on the Live Acquisition USB flash drive will consist of only one DD or E01 file.

7. Browse to the Live Acquisition USB flash drive and run **mem_capture.exe**. You may need to have Administrator rights or the administrator password to perform this step.
8. A prompt will appear saying "Please enter Case name". Type in a case name and press Enter.
9. The Live Acquisition USB flash drive will start capturing the information and save it both on the USB flash drive and the attached Dossier Tray or MPFS. The information will be saved in a folder on the USB flash drive and the attached Dossier Tray or MPFS. The folder name will be the same as the *case* name enteredin step 8. This step may take several minutes to complete.

10. When the acquisition is complete, you will notice that the light on your USB flash drive stops blinking, you may now disconnect the USB flash drive and the NETConnect from the suspect PC.

At this point, you may connect the NETConnect with the attached Dossier Tray or MPFS to your own network. You can either view the data directly or push/transfer the data to your network as described in **Chapter 3. Connecting NETConnect to a Network.**

6. Software Updating Instructions

Logicube NETConnect Software Updating Procedures

New and improved software will appear from time to time on our web site at www.logicube.com. It is possible to update the software in the field by a user.

The software, a file whose filename always starts with **local_** and has a **.tar.xz** file extension can be downloaded from Logicube's website. The software update can then be placed on an FTP server or on a Recovery USB flash drive. For more information regarding the Recovery USB flash drive, see Chapter 7. Creating a recovery USB flash drive.

Loading New Software through a Recovery USB flash drive

To update the software on the NETConnect using this method, you will need to first create a Recovery USB flash drive. For instructions on how to create this, please refer to Chapter 7 Creating a Recovery USB flash drive.

Once the Recovery USB flash drive has been created, follow the steps below to load the new software on the NETConnect:

1. Copy the software file (a file whose filename always starts with **local_** and has a **.tar.xz** file extension) onto the **nc** folder of the Recovery USB flash drive. Overwrite the existing file if prompted.
2. Turn off the Logicube NETConnect and disconnect the network cable from the back of the unit.

3. Attach the Recovery USB flash drive to one of the two USB ports in the back of the Logicube NETConnect.
4. Turn the Logicube NETConnect on. The Power LED should turn on solid green.
5. After about 60 seconds, the **Ready** LED will start blinking (fast blinking LED).
6. About 4 minutes after turning the Logicube NETConnect on, the **Ready LED** will blink slowly.
7. About 5 minutes after turning the Logicube NETConnect on, the **Ready LED** should turn solid and stop blinking.
8. When the **Ready LED** and **Power LED** are both on with solid LEDs (not blinking), turn the Logicube NETConnect off and unlplug the Recovery USB flash drive from the back of the unit.
9. Re-attach the network cable to the back of the Logicube NETConnect and turn the unit back on. Wait for the **Ready LED** to turn on solid green.
10. Once the **Ready LED** turns on as solid green, turn the Logicube NETConnect back off then on again (second reboot). Once the Ready LED turns on solid green on the second reboot, you can verify the software version by following the steps in the section **Verifying the Software**.

Loading New Software through FTP

1. Using a Telnet program, login to the NETConnect. Once connected to the NETConnect, log in with the following credentials (or log in with any username and password belonging to the **itgroup)**:

   Username: it

   Password: it
2. Type **configure terminal** and press **Enter** to go to the configuration menu.
3. Type **upgrade ftp** and press **Enter** to go to the upgrade ftp menu.
4. Type **host ip/name** and press **Enter** to set the host FTP server where “ip/name” is the IP address or host name of the FTP server.

5. Type **file filename** and press **Enter** to set the filename to download where “filename” is the name of the file to download. The default is nc/latest.tar.xz.
6. Type **user username** and press **Enter** where “username” is the name the NETConnect will use to log in to the FTP server.
7. Type **password pass** and press **Enter** where “pass” is the password of the username set in step 6.
8. Type **exit** and press **Enter** to go back to the Configure Terminal menu.
9. Type **config commit** and press **Enter** to commit the changes.
10. Type **exit** and press **Enter** to go back to the root menu.
11. From the root menu, type **upgrade ftp** and press **Enter** to begin the upgrade process. You can check the status of the upgrade process by typing **status** and pressing **Enter** in the root menu.
12. Once the upgrade is complete, turn the NETConnect off. Wait at least five seconds, ten turn it back on. When the **Ready LED** turns on as solid green, turn the Logicube NETConnect back off then on again (second reboot). Once the Ready LED turns on solid green on the second reboot, you can verify the software version by following the steps in the section **Verifying the Software**.

Verifying the Software

1. Connect to the NETConnect via Telnet as described elsewhere in this manual.
2. Login with at least an ITGroup level login (for example, the IT username).
3. From the main menu, type **version** then press Enter.
4. Type **status** and press Enter to see the version information. The **SVN Revision** should match the version on on the filename of the software that was downloaded. The software version can be seen after **local_** (for example, local_r932… …tar.xz).

7. Creating a Recovery USB Flash Drive

Overview

This portion of the document will show you how to create a Recovery USB flash drive using a Windows® based PC. The Recovery USB flash drive will re-install the Operating System of the Logicube NETConnect and should only be used in two scenarios:

1. To update the software on the NETConnect.
2. When instructed to do so by Logicube's Technical Support.

Since this will re-install the Operating System, it will reset all settings back to the factory default settings.

Checklist

The following items are required to create a Recovery USB flash drive:

1. A USB flash drive (minimum size of 2 GB).
2. An archiving utility that can extract/decompress *.XZ files – We recommend 7-Zip version 9.04 (beta version) or higher which supports the *.XZ files. 7-Zip is an open source software. There are two versions available for download; a 32-bit and a 64-bit (x64) version. 7-Zip's homepage can be found at http://www.7-zip.org/
3. Image Writer for Windows (Win32 Disk Imager) – An open source software tool

for Windows used for writing images to USB flash drives. There are two versions available for download; The win32 binaries and the source code (source). Download the win32 binaries. The homepage for Image Writer for Windows can be found at https://launchpad.net/win32-image-writer.

4. The following images (files, found on the included DVD):
    i. DOM Image: dom.img.xz
    ii. USB Image: recovery.img.xz
    iii. NETConnect archive: local_r905_09h37m22s_06-30-2010.tar.xz (or later)

Third Party Software Installation

Two types of software utilities are needed to create the Recovery USB flash drive; an extraction or decompression utility that supports *.XZ files and an image writer that will write images onto USB flash drives. Logicube recommends using 7-Zip and Image Writer for Windows (Win32 Disk Imager). Both of these are open source software.

7-Zip Installation

The following instructions are for 7-Zip. If you are using other extraction/decompression utilities that support *.XZ files, please refer to your software's manual or website for information on installation.

1. Download the 32-bit or 64-bit version of 7-Zip from 7-Zip's website at http://www.7-zip.org/ to a folder of your choosing.
2. Locate and double-click the downloaded file to start the Setup Wizard.
3. Follow the Setup Wizard to install the 7-Zip software (we recommend the default settings).
4. When 7-Zip has been installed, click the **Finish** button to close the wizard.

Image Writer for Windows (Win32 Disk Imager)

The following instructions are for Image Writer for Windows. If you are using a different utility to write images to a USB flash drive, please refer to your software's manual or website for more information.

1. Download the win32 binaries from Image Writer for Window's website at https://launchpad.net/win32-image-writer.
2. Locate and double-click the downloaded file to open the ZIP file.
3. Extract all the files to a folder of your choosing. There is no setup wizard for this software.

Creating the USB Recovery flash drive

The following procedure outlines how to create the USB Recovery flash drive. The procedure involves three (3) sections:

Section I – Preparation

Section II – Extracting the recovery image

Section III – Writing the image to a USB flash drive

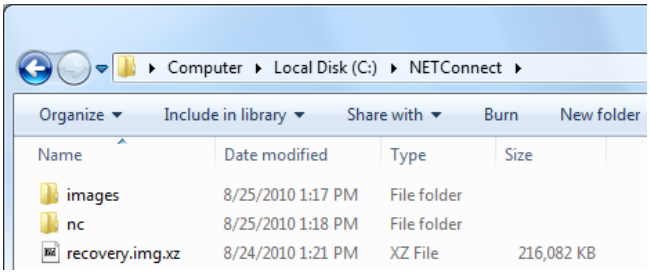
Section IV – Installing the DOM to the USB flash drive.

Section I – Preparation

1. Ensure that you have a blank, formatted USB flash drive available. The USB flash drive must be at least 2 GB in size.
2. Insert the DVD that came with the Logicube NETConnect to your PC's optical drive.
3. Copy the following to your PC to a new folder of your choosing (for example C:\NETConnect):
    a. The file **recovery.img.xz** – located in the root of the DVD.
    b. The folder **images** – should have a file called **dom.img.xz**. Once the folder is copied, the file inside will get copied too.
    c. The folder **nc** – should have a file with a long name on it starting with "local_".

Again, once the folder is copied, the file inside will get copied too.

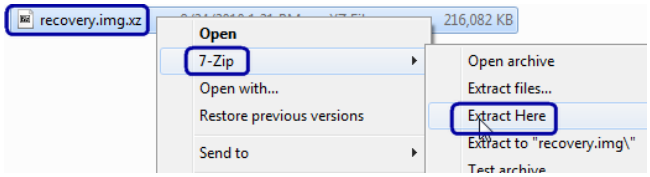
Once the above have been copied, you should see something similar to the image below on your PC:



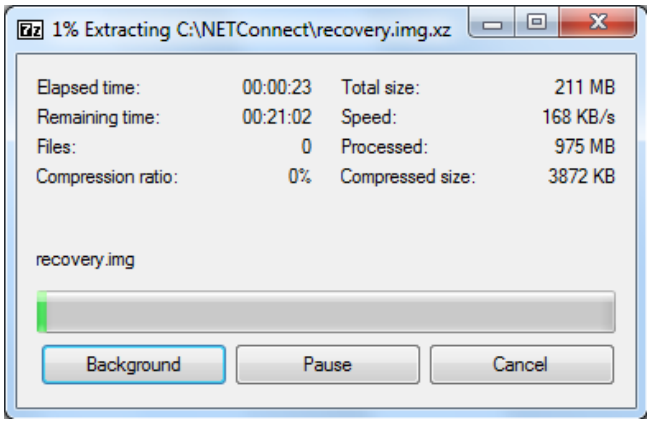
Section II – Extracting the recovery image

The following instructions are for use with the 7-Zip software. If you are using a different extraction utility, please consult the user's manual on how to extract a *.XZ compressed file.

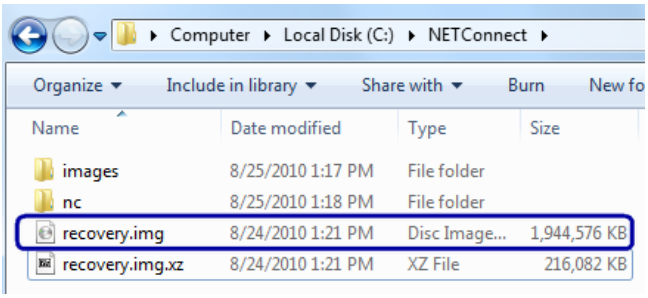
1. Browse to the folder you created in Section I.
2. Right-click on the **recovery.img.xz** file, then go to **7-Zip**, then click **Extract Here.**



3. A window will appear as the recovery image is being extracted. This may take several minutes depending on the speed of your PC.



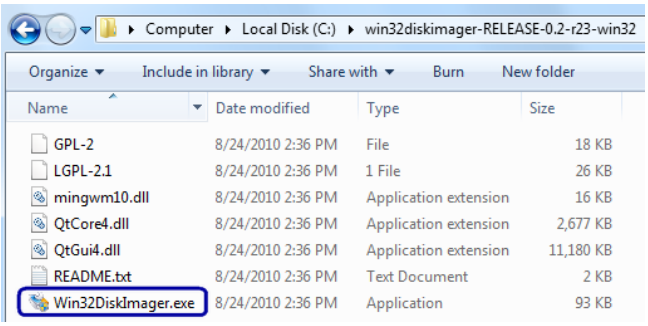
4. When the extraction is complete, the window will close automatically and you should see a new file called **recovery.img** in the folder.



Section III – Writing the image to a USB flash drive

The following instructions are for use with the Image Writer for Windows (Win32 Disk Imager). If you are using a different imaging utility, please consult the user's manual on how to write a *.IMG file to a USB.

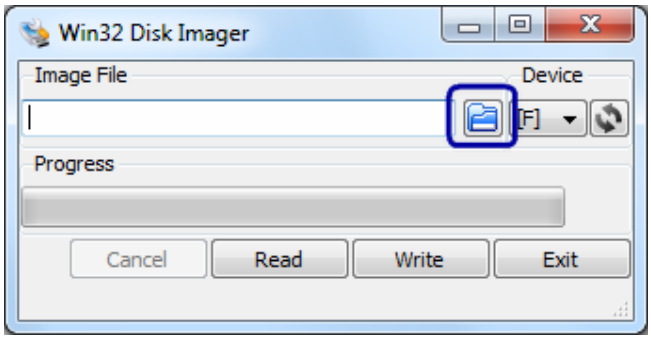
1. Attach a USB flash drive to your PC. The USB flash drive must be 2 GB in size or larger. Ensure that Windows assigns a drive letter to the USB flash drive.
2. Browse to the folder where you extracted the Image Writer for Windows (Win32 Disk Imager) and double-click the **Win32DiskImager.exe** file.


Computer ▸ Local Disk (C:) ▸ win32diskimager-RELEASE-0.2-r23-win32
Organize
Include in library
Share with
Burn
New folder
Name
Date modified
Type
Size
GPL-2 8/24/2010 2:36 PM File 18 KB
LGPL-2.1 8/24/2010 2:36 PM 1 File 26 KB
mingwm10.dll 8/24/2010 2:36 PM Application extension 16 KB
QtCore4.dll 8/24/2010 2:36 PM Application extension 2,677 KB
QtGui4.dll 8/24/2010 2:36 PM Application extension 11,180 KB
README.txt 8/24/2010 2:36 PM Text Document 2 KB
Win32DiskImager.exe 8/24/2010 2:36 PM Application 93 KB

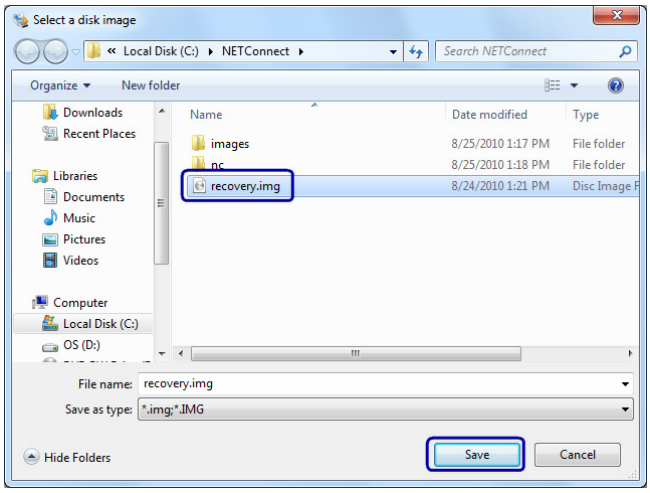
NOTE: If a "File Error" window appears after double-clicking the Win32DiskImager.exe file, click the **OK** button. This error usually appears if the PC you are using has a floppy disk drive.

File Error
An error occurred when attempting to get a handle on the device.
This usually means something is currently accessing the device; please close all applications and try again.
Error 8:
OK

3. In the Win32 Disk Imager window, click the folder icon to select a disk image.

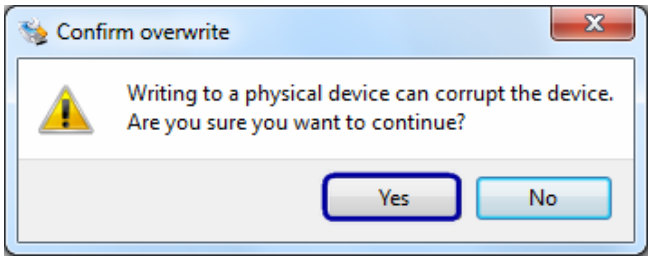


4. Browse to the folder you created in Section I and select the **recovery.img** and click the **Save** button.



5. Make sure that the **Image File** and **Device** are correct. The **Device** should show the drive letter of your USB flash drive. Click the **Write** button to begin writing to the USB flash drive.

6. A confirmation screen will appear. Click the **Yes** button to continue.



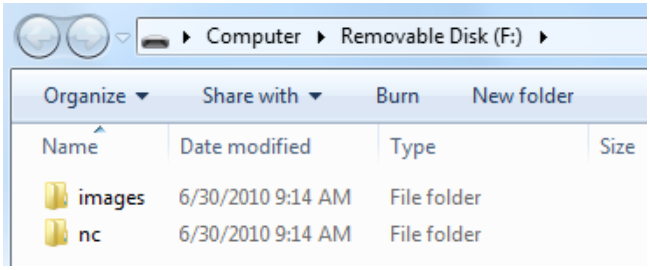
7. Win32 Disk Imager will start to write to the USB flash drive.

8. When the process completes, no message will be shown that it is complete. The progress percentage will simply disappear and you will see the screen below. Click the **Exit** button to exit Win32 Disk Imager.

Section IV – Installing the DOM to the USB flash drive

The following instructions complete the recovery USB flash drive.

1. Remove the USB flash drive from the PC.
2. After about 10-30 seconds, re-attach the USB flash drive to the PC.
3. Browse the contents of the USB flash drive. Two folders should be visible; **images** and **nc**.



4. Browse to the folder you created in Section I and go into the **images** folder. Copy the **dom.img.xz** file to the **images** folder of the USB flash drive.
5. Browse to the folder you created in Section I and go to the **nc** folder. Copy the **local…tar.xz** (the file that begins with **local**_) to the **nc** folder of the USB flash drive.
6. Once both files have been copied from steps 4 and 5, the Recovery USB flash drive is ready to go.

Using the Recovery USB flash drive

The Recovery USB flash drive will re-install the Operating System onto the Logicube NETConnect. This will remove all the saved settings on the Logicube NETConnect and should only be used in the following scenarios:

- When the **Ready** LED on the Logicube NETConnect remains blinking (does not turn into a steady LED) when the unit is turned on.
- When instructed by Logicube's Technical Support team.

To use the Recovery USB flash drive, perform the following steps:

1. Turn off the Logicube NETConnect and detach the network cable from the back of the unit.
2. Attach the Recovery USB flash drive to one of the two USB ports in the back of the Logicube NETConnect.
3. Turn the Logicube NETConnect on. The Power LED should turn on solid green.
4. After about 60 seconds, the **Ready** LED will start blinking (fast blinking LED).
5. About 4 minutes after turning the Logicube NETConnect on, the **Ready LED** will blink slowly.
6. About 5 minutes after turning the Logicube NETConnect on, the **Ready LED** should turn solid and stop blinking.
7. When the **Ready LED** and **Power LED** are both on with solid LEDs (not blinking), turn the Logicube NETConnect off and unlplug the Recovery USB flash drive from the back of the unit.
8. Re-attach the network cable to the back of the Logicube NETConnect and turn the unit back on. Wait for the **Ready LED** to turn on solid green.
9. Once the **Ready LED** turns on as solid green, turn the Logicube NETConnect back off then on again (second reboot). Once the Ready LED turns on solid green on the second reboot, an administrator can set up the Logicube NETConnect for use (users, FTP/CIFS path and configuration, etc.)

8. Frequently Asked Questions

Q: Can I use the NETConnect with any other Logicube forensic duplicators?

A: At this time the NETConnect is designed to work exclusively with the Forensic Dossier Tray and the MPFS only.

Q: What file access protocols does the NETConnect use?

A: CIFS, NFS, FTP, and iSCSI.

Q: Does NETConnect support TCP?

A: Yes, NETConnect supports the following network protocols; ARP, IP, UDP, TCP, HTTP, ICMP, BOOTP/DHCP, DNS, MDNS and Telnet

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For further assistance please contact Logicube Technical Support at: 818 700 8488 ext. 3, or by email to techsupport@logicube.com. Hours are 7:00am to 5:00pm PST M – F.

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